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SOURCE Russian newspaper, Pravda, 4-11 August 1948. (Information specifically requested.)

THE 1948 SESSION OF THE ALL-UNION

ACADEMY OF AGRICULTURAL SCIENCES imeni V. I. Lenin

(31 July 1948 - 7 August 1948)

THE LYSENKO-SHMAL'GAUZEN CONTROVERSY

I. SUMMARY OF EVENTS

The regular session of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin opened on 31 July 1948. The session was attended by 46 active member-academicians, scientific workers from agricultural scientific research institutes and experimental stations, professors of higher agricultural educational institutions, the biological institutes of the Academy of Sciences of the USSR, the Chair of Biology of the Moscow State University imeni M. V. Lomonosov, and others. A total of approximately 700 people took part in the session.

The main feature of this session was a report read by the president of the Academy, Academician T. D. Lyenko, entitled "On the Situation in Biological Science."

Following the reading of this report, the members of the Academy took part in a debate on its recommendations and principles. Academician I. I. Shmal'gauzen, one of the main targets of criticism in Academician Lyenko's report, participated and replied to Lyenko.

At the closing meeting of the session, Academician Lyenko made his concluding remarks. He first stated, in answer to a question, that the Central Committee of the All-Union Communist Party had examined his report and approved it. He then summarized his main points, and led the session in adopting its resolutions in the form of a letter to I. V. Stalin.

- 1 -

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In the course of the debate on this report, the following made speeches in favor of Academician Lysenko's position:

Academician M. A. Ol'shanskiy of the All-Union Selection Genetics Institute; Academician I. G. Eykhfel'da, Director of the All-Union Institute of Plant Studies; Academician I. V. Yakushkin of Sovkhoz imeni Stalin, Kuban; S. I. Isayev, Deputy of the Chair of Selection for Fruits and Vegetables, Saratov Agricultural Institute; Academician N. G. Belen'kiy; Academician P. N. Yakovlev, Central Genetic Laboratory imeni I. V. Michurin; P. F. Placetskiy, Director of the Ukrainian Scientific Research Institute of Fruit Raising;

Doctor of Agricultural Sciences I. A. Minkevich, Director of the All-Union Scientific Research Institute of Olive Tree Raising; Professor N. I. Nuzhdin, Institute of Genetics, Academy of Sciences USSR; Corresponding Member of the Academy of Sciences of the Armenian SSR N. M. Sisakyan, Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR; Professor S. G. Petrov, Scientific Research Institute of Bird Raising; Academician A. A. Avakyan; Doctor of Biological Sciences I. A. Kapoport, Institute of Cytology, Academy of Sciences USSR; Professor K. Yu. Kostryukova, Deputy of the Chair at the Kiev Medical Institute; Professor Z. Ya. Beletskiy, Moscow State University; Academician V. P. Bushinskiy; Academician S. S. Perov; V. S. Dmitriyev, Chief of the Administration for Planning Agriculture of Gosplan USSR; G. A. Babadzhanian, Director of the Institute of Genetics of Plants, Academy of Sciences Armenian SSR;

Academician Ye. I. Yshakova, Director of the Gribov Selective Station; V. A. Shaumyan, Director of the State Pedigreed Cattle Breeding Station; Academician D. A. Dolgushin; Agronomist I. I. Khoroshilov, Rostov Oblast Administration for Agriculture; Academician L. K. Greben', All-Union Scientific Research Institute for the Acclimatization and Hybridization of Animals (Askaniya Nova); A. V. Pukhal'skiy, Representative of the Chief of the Main Administration for Grain and Olive Tree Cultures, Ministry of Agricultural Sciences USSR; Academician S. F. Demidov; Academician V. M. Zuvn; Academician P. P. Lobanov; Academician I. F. Vasilenko;

Academician P. P. Luk'yamenko (hybridization of wheat); Academician S. N. Murontsev; Academician A. N. Kostyakov; N. I. Feyginson, Mordov State Selective Station; A. P. Vodkov, Director, Moscow Selective Station; A. V. Krylov, Director of the Institute of Soil Studies of the Central Black Earth Belt imeni Dokuchayev; Docent S. I. Alikhanyan, Moscow State University; Professor N. V. Turbin, Leningrad State University; P. M. Zorin, Deputy of the Section for Selection, Sochi Testing Station for Subtropical Plants; Academician I. I. Present; A. V. Mikhalevich, Deputy Editor "Ukrainian Pravda"; Professor B. A. Rubin, Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR;

F. A. Teterev, All-Union Institute for Plant Studies; G. P. Vysokos, Director of the Siberian Scientific Research Institute for Grain Culture; Candidate for Agricultural Sciences I. N. Simonov; Professor D. A. Kislovskiy, Agricultural Academy imeni K. A. Timiryazev; F. A. Dvoryankin, Editor of the Journal "Selection and Seed Culture"; Academician M. B. Mitin; Doctor of Biological Sciences I. Ye. Glushchenko, Institute of Genetics, Academy of Sciences USSR; V. N. Stoletov, Deputy Director, Institute of Genetics, Academy of Sciences USSR; and Ye. N. Chekmenev, Deputy for the Minister of Sovkhoz USSR.

The following made speeches stating that they did not wholeheartedly adopt Lysenko's views:

Academician V. S. Nemchinov, Academician I. I. Shgal'gauzen, P. M. Zhukovskiy, V. N. Zavodskiy, and Professors I. M. Polyakov and A. K. Zhebrak.

- 2 -

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II. ACADEMICIAN LYSENKO'S REPORT

The following is a summary of the report, "On the Situation in Biological Science," delivered by Academician T. D. Lysenko:

Biological science is the basis of agronomy. The agronomical sciences deal with living bodies: plants, animals, and microorganisms. Consequently, many biological theories are fundamental to agronomy. The greater the discoveries in biological science, regarding the various laws of life and the development of living bodies, the more effective will be the results of the agronomical sciences.

Agronomical sciences are as complex as biological science. In our own particular agricultural science, one of the most important factors is the methodological level of biological knowledge; that is to say, the knowledge of biological science regarding the laws of the life and development of plants and animals.

Darwin, in The Origin of Species, laid the foundation for scientific biology. The basic concepts of the Darwinian theory are natural and artificial selection. This selection of mutations which are favorable to an organism is noticeable in the animal world. It is particularly noticeable in the structure of the organisms and their adaptability to nature.

Agriculture gave Darwin all kinds of data on which he was able to base his theory of evolution and explain the natural reasons for the selection of structures in the organic world.

Under the leadership of F. Engels, the knowledge of the interrelation of processes evident in nature moved forward in gigantic steps. This was due primarily to three important discoveries: (1) the discovery of cells, (2) the discovery of the transformation of energy, and (3) the discovery of Darwin's theory that around us exist organisms, including man, which are the result of a long period of development from primary unicellular organisms. These unicellular organisms in turn developed as the result of chemical action on protoplasm or albumin.

Classical Marxism values the Darwinian theory very highly, but nevertheless points out several of the mistakes made by Darwin. Although Darwin's theory was basically materialistic, he instilled some reactionary Malthusian ideas in his materialistic theory of evolution. The present day scientific biologists cannot and must not ignore the mistakes made by Darwin.

Biologists must constantly remember the words of Engels: "All of Darwin's studies on the struggle for survival are a simple selection from Hobbes's studies on mutual conflict, the bourgeois-economist science of concurrence, and the Malthusian theory of population. The naïveté of these theories is very evident. It can therefore be said that proponents of these theories are primarily poor economists, and only after that can we consider them poor naturalists and philosophers."

It is easy to see why Darwin accepted the Malthusian theories, which were completely opposed to his materialistic views, since Darwin began his scientific life during an epoch when Malthusian theories were being preached.

However, as soon as Darwin's theories were propounded, it became evident that the scientific, materialistic nucleus of Darwinism--studies of the development of the animal kingdom--is completely antagonistic and opposed to the idealistic approach to biology. Because of this, reactionary biologists

- 3 -

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have constantly attempted to do away with the materialistic elements in Darwin's theories. Such voices as that of K. A. Timiryazev were lost in the storm of anti-Darwinistic denouncements which issued from the camp of the reactionary biologists of the whole world. Among those opposed to Darwin were such people as Weismann, Mendel, and Morgan, the founders of present-day reactionary genetics.

Weismann termed his concepts "Neo-Darwinism," but actually they were a complete departure from the materialistic side of Darwinism and an acceptance of the ideological and metaphysical approach to biology.

Weismann teaches that it is necessary to consider the hereditary constituent of the nucleus and that the only carriers of heredity are the chromosomes. In addition, he states that there are two major categories in the animal kingdom; the so-called hereditary matter or ideoplasma and the so-called nutritional matter or trophoplasma. Weismann further states that chromosomes, the carriers of hereditary characteristics, can be considered merely as a nutritive media for the hereditary matter, which is immortal and can never be conceived.

According to Weismann, this hereditary matter is never newly formed and in the development of the individual it undergoes no development and cannot carry with it any mutations. The immortal hereditary matter independent of the qualitative particulars of the development of the living body gives the basic characteristics to the foetus, but does not remain in it. Such an idealistic and mythical conception became known as Neo-Darwinism.

Mendel and Morgan furthered this mysticism in the study of biology.

Thus we see during this epoch a conflict of two ideological worlds strongly opposed to one another. It was during this period of conflict that Socialistic Farming and Agricultural Sciences developed for themselves their own new Michurinian Soviet Biological Science which was closely related to agronomical requirements and became generally known as Agrobiology.

The new active trend in biology met with all sorts of opposition from the representatives of reactionary foreign biology as well as from scientists in our own country. The representatives of this reactionary biological science, the Neo-Darwinists, Weismannists, Mendelists and Morganists, based their science on the chromosome theory of heredity.

The Michurinian theory can be considered neither Neo-Lamarckian nor Neo-Darwinistic. It is a new Soviet Darwinism which ignores the mistakes of Darwin, and gives the biologist a whole new field in which he can study the physiological aspects of mutations affecting plants and animals in nature. One of the principal problems which still remains to be solved is whether it is possible to create a definite hereditary change in plants or animals during their own lifetime. Protagonists of Michurin, with their materialistic and dialectic data, can support such a theory. Followers of Mendel and Morgan, due to their complex metaphysical and ideological approach, cannot support such a theory.

K. A. Timiryazev expounds the basic chromosome theory in one of his articles. He states it as follows: The genetic parents are not the parents of their offspring but actually brothers and sisters.

Kessel, in his article "Genetics," attempts to explain why changes which occur to the parent during his lifetime are not transmitted to the offspring, by saying that the offspring are not a product of the parent but a product of that basic material which is inherent to the parent.

- 4 -
RESTRICTED

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This metaphysical and ideological theory states that the six cells are one of the results of the life activity of the parent organisms. Academician M. K. Kol'tsov, in keeping with this Weismannistic-Morganistic ideological and metaphysical idea, stated that neither oxidizing nor reducing the basic material will affect the offspring.

Thus, we can see that the materialistic approach to biology opposes the Morgan-Mendelian idealistic approach on two basic points: (1) the mortal body, and (2) the immortal hereditary matter. In addition, proponents of the latter state that changes to the living body do not affect the hereditary matter.

The Morgan-Mendelian school solves the problems arising with this mythical hereditary matter by the concept of the indeterminate nature of variability. It teaches that mutation, i.e., the change of this hereditary substance, does not at any time have a determinate direction. This is logically the outcome of its teachings, especially of the principle that this hereditary matter is not related to the living body, or to the conditions of this body's life, i.e., its environment.

Following the unscientific, reactionary teachings of Morganism on "indeterminate variability," Academician I. I. Shmal'gauzen, Deputy of the Chair of Darwinism of Moscow University, has written in his book The Factors of Evolution, published by the Academy of Sciences of the USSR in 1946, that hereditary variability is not related to the environment, and therefore is indeterminate.

Academician Shmal'gauzen has expressed views conforming to those of the Morgan-Mendelian school, and has preached such ideas in biological and agricultural institutions. He has given absolutely no recognition to the theories of genetics as expressed by Michurin.

That is the kind of Darwinist Academician Shmal'gauzen is!

But his book, at the recommendation of the Biological Faculty of Moscow University, has been praised as a masterpiece of creative Darwinism. This book has been highly recommended by the deans of two biological faculties, those of Moscow and Leningrad Universities. This book has been praised by the Professor of Darwinism of Khar'kov University, I. Polyakov, by Yu. Polyanskiy of Leningrad University, by Academician B. Zavadovskiy of the All-Union Academy of Agricultural Sciences, and by a whole series of other Morganists.

Now, however, the All-Union Academy of Agricultural Sciences imeni Lenin, with the assistance of the Party and our great leader Stalin, has accepted the more reliable and more practical theories of Michurin. This will permit the formation of new armies of academicians and corresponding members, who, as Michurinists, will further Michurin's theories.

Michurin's principle is: we cannot wait for favoritism from nature; we must take it from her. That is our task.

The underlying principle of Michurin's work is that it is possible to speed up desired mutations in each form of animal or plant life. He teaches that the organisms and the environmental conditions necessary for their life represent an entity, and that heredity is that property of the living body which makes use of determined conditions for its life and development and which reacts in a determined manner to one or the other characteristic.

- 5 -

RESTRICTED

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There are two basic qualitative changes which occur during the development of organisms: (1) mutations connected with the processes of the individual cycle of development, in which heredity is the result of environment; (2) changes of nature, in other words, changes of heredity. These changes are also the result of individual development, but such cases are deviations from the usual trend. The changes in heredity are usually the result of the development of the organism under different environmental conditions. Thus changes in the environment of the plant result in a change in the very development of the plant. Therefore, mutation of the species is a type of development due primarily to variations in heredity. Those organisms which are unable to accept these changes die and consequently bear no offspring.

The degree of transmission of mutations in heredity will depend on the degree of the variant factors of the body in the general cycle of the development of the sexual or vegetative cells. An understanding of the formation of heredity in an organism will permit artificially induced mutations to be effective if applied at a determined moment during the development of the organism.

The chromosome theory of heredity states that plant hybrids are possible only through sexual reproduction. However, Michurin was able to determine a method of mass production of vegetative hybrids by means of grafting. These vegetative hybrids are in themselves living proof of the reliability of Michurin's approach to heredity.

According to Michurin, heredity is the effect of a concentration of outside influences (environment) assimilated by the organisms and resulting in definite deviations from the normal.

Animals, like plants, have developed and will develop in close relation with the conditions of their environment.

The science and practice of Soviet animal husbandry, based on a State plan for the breeding of domestic animals of necessary quality and quantity, is founded on the following principle: to select species in accordance with conditions of feed, their raising and climate, to perfect these species and simultaneously to determine the best methods for feeding and raising.

We have shown several examples of how Michurin's theory has aided agriculture and animal husbandry. In keeping with the tasks set by the Party and the State, it is necessary for Michurinian science to move forward and make greater developments in scientific biology. This will be the task of the ever increasing army of Michurin biologists.

Michurin, it is true, departs from the Darwinian theory of evolution. However, this is only because the Darwinian theory is insufficient for solving problems of socialistic agriculture. As a result, Soviet agrobiolgy is founded on Darwinism interpreted in the light of Michurin's and Vil'yams's studies.

For us, Soviet biologists, there is no more honored task than the active development of Michurin's theories and the introduction of his methods into the study of the nature of the development of man. Our first task, however, is to appoint new Michurinists to teaching posts and thus further the development of a truly Soviet biology -- Michurin's biology.

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III. ACADEMICIAN SHMAL'GAUZEN'S REPLY

On 8 August Academician I. I. Shmal'gauzen replied to the charges made against him by Lysenko. The following is a summary of his speech:

I have always considered myself as being a proponent of the materialistic approach to evolution and have never considered the idealistic approach. I am not a geneticist but am primarily a morphologist, embryologist, and phylogeneticist. My only dealings with genetics have been in connection with the phenogenetics of racial indications in chickens.

In my book, Problems of Darwinism, you will find criticism of the theories of Weismann and de Vries, of formal genetics, and of the theory of preadaptation.

It is evident that the problem facing this session deals with the question of the sources of variability. I claim that the source of variability is in an external media; however, this variability is developed as a result of the interrelation of the organism with its environment, and therefore the specific nature of mutation is determined more by the organism itself than by the environment.

I have never given a positive evaluation to separate mutations. I have never spoken of the use of separate mutations, much less recommended it to those interested in selective breeding. I have always talked of the complex hereditary and nonhereditary changes.

The charge was also made that none of my books mentioned the work done by Michurin. This is unwarranted as I utilize only that material which is necessary to explain my theories on the stabilization of selection. However, I draw your attention to a book which was published simultaneously with Problems of Darwinism. This book, Factors of Evolution, contains the history of problems dealing with factors of evolution and cites practical applications of Darwinistic theories. A large part of the book discusses classical Darwinism, and particular attention is given to the work of K. Timiryazev as well as the very remarkable achievements obtained by Michurin. In this part of the book I also discuss the work of Academicians Lysenko and Tsitsin and other Soviet scientists interested in selective breeding.

In conclusion let me state that I consider external factors as sources of mutations and consider cross breeding as a method which permits a more rapid combination and synthesis of the dominant factors in separate mutants. It is evident that my theories have nothing in common with the theories of amphimixis.

IV. ACADEMICIAN LYSENKO'S CLOSING REMARKS

The following is a summary of the remarks delivered by Academician Lysenko at the conclusion of the session:

It is interesting to note that the proponents of the so-called chromosome theory of heredity deny being followers of Weismann and state their opposition to his theories. However, in my articles on the Michurin theory, I have often shown that the theories as expressed by Weismann are the same as those expressed by the followers of the chromosome theory of heredity.

- 7 -

RESTRICTED

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The Michurin trend in biology can be called materialistic as it does not draw a line between the conditions of heredity and the living body and the conditions surrounding its existence.

We recognize the existence of chromosomes; however we do not recognize the chromosome theory of heredity. We do not recognize the theories as expounded by Mendel and Morgan.

It is notable that in foreign countries, for example the United States, which is the birthplace of Morganism, Morgan's theories are not accepted in agricultural practice. His theories develop along one route, but practice adopts another line of reasoning.

Genetic mutation, in accordance with theories expressed by Mendel and Morgan, occurs haphazardly. Chromosome mutation also occurs haphazardly. Consequently, the trend of mutation processes also is haphazard.

Michurin developed his theories only as a result of his studies in connection with the solution of important problems for the selection of good types. Therefore, in their principle, Michurin's theories do not digress from practice.

Michurin's studies are inseparable from agricultural and animal husbandry practice. They are one of the best examples of unity of theory and practice in agricultural sciences. It is quite clear to us that without farms and animal-breeding stations, it is impossible to obtain a widespread development of Michurin's theories.

This session has great historical significance, for it has cleared the way for the real triumph of Michurin's teaching and its further fruitful development. The attempts of individual representatives of the outmoded reactionary school of Morgan-Mendelianism to defend their positions are hopeless.

There is no place for chance in science. Physics and chemistry have achieved the greatest successes in their development because they repudiated any explanation of natural phenomena as matters of chance. Biological science must learn from this.

V. RESOLUTIONS OF THE SESSIONS

The resolutions adopted unanimously at the session in the form of a letter to I. V. Stalin, may be summarized as follows:

Science, cut off from the people and from practice, is not Science.

Our agrobiological science, developed in the works of Timiryazov, Michurin, and Lysenko, is the most progressive agricultural science in the world. Michurin's teaching is a new, higher stage in the development of materialistic biology. Michurin's biological science will continue creatively to develop Darwinism; steadily and resolutely unmask reactionary, idealistic, Weissmann-Morganist scholasticism divorced from practice; fight against obsequious deference to bourgeois science unworthy of the Soviet scientist; and liberate research workers from the survivals of idealistic, metaphysical ideas.

- 8 -

RESTRICTED

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Progressive biological science repudiates and unmasks the harmful idea of the impossibility of directing the nature of organisms with the help of the conditions of life of plants, animals, and microorganisms, which are under man's control.

Science must teach investigators to dare to seek ways and means of directing nature for the needs of human beings.

We are inspired along this path by your instructions about a progressive science which serves the people, values traditions, but is not afraid to lift its hand against all that is outlived.

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- 9 -

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